

Date: Wednesday, 4/5/2006 3:24:10 PM  
 User: Kim Johnston

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: X-TUBE EXTRUSION OH-58		
Job Number	: 26549		Part Number	: D6005128		
Estimate Number	: 10005		Drawing Number	: D6005 REV A		
P.O. Number	: N/A		Project Number	: N/A		
This Issue	: 4/5/2006	S.O. No. : N/A	Drawing Revision	: A		
Prsht Rev.	: NC		Material	: N/A		
First Issue	: N/A		Due Date	: 7/20/2006 Qty: 25 Um: Each		
Previous Run	: 25665					
Written By	:					
Checked & Approved By	:					
Comment	: Est Rev:C 04/06.15 Added tolerance to Step 2 KJ/JLM					

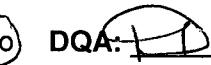
## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
1.0	PG	PURCHASING
Comment: PURCHASING		
Issue P/O: <u>933</u>		<u>u</u> <u>06-04-10</u>
a) Order as per Dwg D6005 b) Material: 2.750 x 0.375 wall 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube c) Minimum ultimate tensile strength = 77 ksi d) Minimum tensile yield strength = 66 ksi e) Tolerance are per ASTM B210 (see details on Dwg D6005) f) Material certification required		
2.0	D6005128P	Crosstube material
Comment: Qty.: 1.0000 Each(s)/Unit Total : 25.0000 Each(s)		
Crosstube material		
3.0	PACKAGING 1	PACKAGING RESOURCE #1
Comment: PACKAGING RESOURCE #1		
Receive & Inspect For Transit Damage		
Ensure material certification is attached		
4.0	QC6	DIMENSIONAL CHECK
Comment: DIMENSIONAL CHECK		
Ensure Material certification comply to Dwg D6005		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes  No  DQA:  Date: 07/01/11  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Drawing Name: X-TUBE EXTRUSION OH-58

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Job Number:



Seq. #: Machine Or Operation:

Description :

5.0 HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

N/A

6.0 QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

7.0 PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

M A + 25 + 24      07/01/11      27

8.0 DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

27  
07/01/11

Job Completion



C 07/01/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

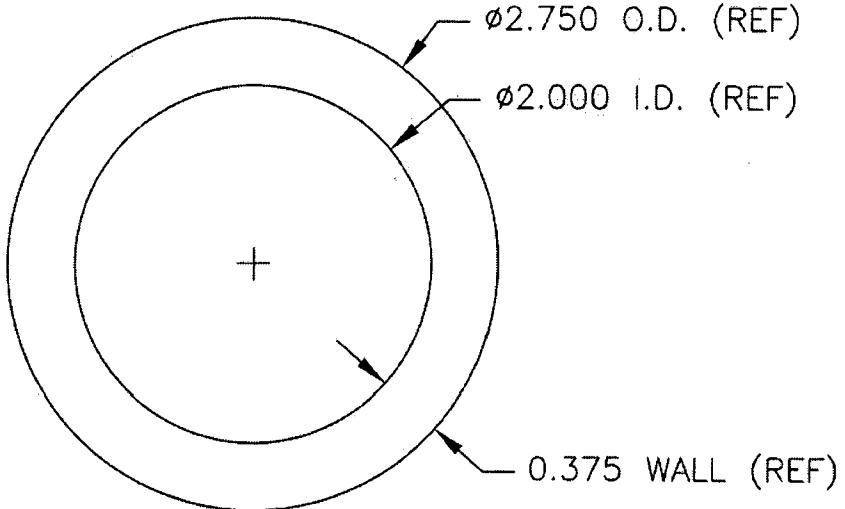
NOTE: Date & initial all entries

**DART**

DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>+</i>	APPROVED <i>+</i>	DRAWING NO. D6005	REV. A SHEET 1 OF 1
DATE 00.11.17		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.17	NEW ISSUE	

## SPECIFICATION CONTROL DRAWING

**RELEASED**  
00.11.24 *off*



### NOTES

- 1) D6005-XXX CROSSTUBE

LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 128" LONG TUBE: D6005-128

- 2) MATERIAL: 2.750 OD x 0.375 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi  
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.006$  MEAN ( $\pm 0.012$  INCLUDING OVALITY)  
WALL:  $\pm 0.015$  MEAN ( $\pm 0.038$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.125/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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ENGINEERING

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SUBJECT TO AMENDMENT  
WITHOUT NOTICE

WORK ORDER

NO. *26549*



ALUnna

## Abnahmeprüfzeugnis 3.1 - EN 10204:2004

Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004

<b>Kunde:</b>	Dart Aerospace Ltd.	<b>Zeugnisnummer:</b>	764/06											
<b>Client:</b>	1270 Aberdeen Street K6A1K7 Hawkesbury, ON Canada	<b>Cert No. / No. du certificat:</b>	PO 00000933											
<b>Produkt:</b>	Rohre nahtlos gepresst Tubes seamless extruded	<b>Bestellnummer:</b>	18609/3											
<b>Spezifikation:</b>	-; AMS - QQ - A - 200/11E; -, Spezifikation Dart Aerospace 6005	<b>Auftrag:</b>	Our Reference/Notre Reference:											
<b>Werkstoff:</b>	7075	<b>Zustand:</b>	T 6511											
<b>Alloy/Alliage:</b>	2,750 INCH x 2,000 INCH x 0,375 INCH x 128,000 INCH	<b>Temper/État:</b>												
<b>Abmessung</b> <b>Size / Dimension</b>	D6005-128 2.750 x 0.375 x 128	<b>pes.</b>	lbs											
<b>Kennzeichnung</b> <b>Marking/Marquage:</b>	ALUnna - Cert No. 764/06 - 7075 - T 6511 - Cast No. 80002 - QQA 200/11E - 2.750" OD X 0.375" Wall - Heat No. 624/08 - Lot 18609/3-1 - PO. 00000933	27	983											
<b>Lieferung</b> <b>Delivered Material / Matériel délivré:</b>			<b>Country of Manufacture:</b> Germany											
<b>1. Chemische Analyse</b>		<b>Chemical Analysis / analyse chimique</b>												
Charge/ Cast No.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni	
min.			1,2		2,1	0,18	5,1							
max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20						
80002	0,088	0,140	1,42	0,079	2,52	0,178	5,81	0,036	0,004	0,023	0,001	0,001	0,0001	
<b>Hydrogen content:</b>		0,13 ccm/100 g Al												
Elements without indication < 0,01 %														
<b>2. Mechanische Eigenschaften</b>		<b>Mechanical Properties / Valeurs Mécaniques</b>												
Anforderungen Requirements	tensile (Rm) ksi		yield (Rp0,2) ksi		elongation 2" %		elongation A %		Hardness HB		Heat No.			
	min.	max.	77,0	66,0										
1	87,725	87,145	81,925	80,910	9,0	9,0			171	173	624/08 - 27 pcs.			
2														

RMS outside 25 - max. 12 $\mu$ "

**Ergebnis der Prüfungen:** Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

**Test results:** We confirm that the delivery has been tested and applies to the agreements made on receipt of the order  
**Resultats:** Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande